HISTORY OF THE SCHOOL OF NATURAL RESOURCES

THE OHIO STATE UNIVERSITY

PREPARED IN KEEPING WITH THE CENTENNIAL CELEBRATION

1970

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CHAPTER I

INTRODUCTION

Training, research, and continuing education related to natural resources have existed for many years through several departments of The Ohio State University. In an effort to coordinate and strengthen all university programs concerning natural resources, the Board of Trustees approved creation of the School of Natural Resources in the College of Agriculture and Home Economics effective July 1, 1968. The programs of the school are designed to focus on the interaction of man's natural environment wherein social factors, science, and political practices are recognized as co-determinants. The goal is a holistic view of man in relation to his natural resources base.

Most of the present departments or schools of natural resources in institutions of higher learning in the United States evolved from strong departments of forestry. At The Ohio State University, creation of the School of Natural Resources evolved from efforts to find an administrative structure wherein the many disciplines which contribute knowledge to this subject area could find expression in multidisciplinary teaching, research, and continuing education programs. Historically, natural resources programs were diffused throughout the University to such an extent that they had little visibility within the institution and virtually no visibility externally. Nonetheless, these programs were significant and guarded zealously by the departments in which they were located.

The creation by the Board of Trustees of a Natural Resources Institute effective October 1, 1955, was the first significant step to coordinate these programs. Through the Institute, faculty members from many disciplines were enabled to give meaningful expression to their interest in this subject and to convey that interest to responsible university officials. Appendix C provides a record of the origin and program of the Natural Resources Institute.

The recent reorganization of the University into basic, professional, and graduate professional groups of colleges provided an opportunity to consider where and how best to formalize natural resources programs within the new pattern of University administration. The official steps by which the School came into being are presented in chronological order in Appendix F. This record does not include the many individual contributions made by interested faculty members in conceptualizing and structuring the program and in assisting in its adoption. More than one hundred faculty members were so involved.

At this time, the School of Natural Resources is authorized to offer a Master of Science program beginning with the Autumn Quarter of 1969, to offer courses at both undergraduate and graduate levels, and to supervise undergraduate student programs under any one of the several programs of the College of Agriculture and Home Economics. The courses to be offered initially are listed later in this document. A list of the faculty members who will inaugurate this program follows the course listing.

Although official events leading to the creation of the School of Natural Resources are of recent date, there were earlier important contributing steps. The more significant of these are outlined in Chapter II.

CHAPTER II

EVOLUTION OF PROGRAMS PRECEDING DEVELOPMENT OF THE SCHOOL OF NATURAL RESOURCES

The Lake Laboratory--The Franz Theodore Stone Laboratory (1889)

In 1895, the University President recommended that the Board of Trustees study the possibility of establishing a lake laboratory near Sandusky. A laboratory was established by action of the Board in 1896. The laboratory initially shared limited facilities at the State Fish Hatchery near Cedar Point, next at Peach Point, and Put-in-Bay. Some thirty years later, Juelius F. Stone provided for year-round facilities for the laboratory on Gibralter Island in Lake Erie. A trustee of the University, Mr. Stone purchased the island with its "castle" from the Jay Cooke heirs and donated it to the University. Cooke, the famous financier of the Civil War Period, had long held this property as a summer home prior to his death.[1]

The laboratory was then and is now operating in a general philosophical framework concerned with the study and investigation of problems related to aquatic biology. A quotation taken from an early statement of purpose given by the first director, Herbert Osborn, who guided the program for some twenty years, summarizes the purposes of the laboratory.

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[1] Castle O. Hooper, History of The Ohio State University, Vol. II (1910-1925) (Columbus, Ohio: The Ohio State University Press, 1926), pp. 62-63.

> It is our hope and aim to make the laboratory of service to any student in any phase of biology that can profitably be studied under the conditions here. To make this as broad and emphatic as possible, we may say that it will be our policy to assist to the extent of our ability any competent scientific workers, from any institution or locality, in the prosecution of any investigation which our locality and equipment may permit... . We hope educators and scientific workers, in our own and adjacent states especially, will find it a profitable meeting ground, and feel that its opportunities are open on the most liberal basis to all.[2]

For most of its history, the laboratory has been operated largely during the summer months. A year-round research program under an Institute of Hydrobiology was conducted between 1936 and 1955. In the latter year, the Institute of Hydrobiology was discontinued, and responsibility for use of the facilities of the laboratory was placed in a newly created Natural Resources Institute (October, 1955). Through this Institute, instruction and research at the laboratory by a number of university departments was encouraged. This led to optimum use of existing facilities and a greatly expanded program during the summer months. Upon recommendation of the Natural Resources Institute, responsibility for use of these facilities was transferred to the biological science departments.

The Agricultural Experiment Station--Ohio Agricultural Research and Development Center (1882)

Through the efforts of farmers, agricultural organizations, The Ohio State University faculty, and the State Board of Agriculture, an experiment station was developed for "prosecution of practical and scientific research in agriculture and forestry and the development of

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[2]Ibid., p. 72.

the agricultural resources of the state."[3]

The original station headquarters was located on the university campus. William R. Lazenby, Professor of Horticulture, served on a joint appointment as the station's first director. Dr. Norton S. Townshend, Professor of Agriculture, also on a joint appointment, succeeded Professor Lazenby. Expansion through the Hatch Act of 1887 enabled the full-time directorship appointment of Dr. Charles Embree Thorne in 1888. Station headquarters remained in Columbus until 1892 when it was moved to a site near Wooster.

In 1965, the Ohio General Assembly passed legislation changing the name of the Experiment Station to the Ohio Agricultural Research and Development Center. Many of the current professional staff, about 275 scientists including 150 faculty members at The Ohio State University who devote part time to Center research, are concerned with research projects related to natural resources. There are two departments at the OARDC affiliated with the School of Natural Resources: Fisheries, Wildlife and Recreation, and Forestry.

The Department of Forestry (1908)

The Ohio State University was an early pioneer among American institutions offering course work in forestry. Since 1891, instruction in forestry has been offered by the university. Between 1891 and 1908, instruction was general in nature and was required of all horticulture students seeking the degree Bachelor of Science.

In 1908, a Department of Forestry was established. Its basic objectives were to educate and train men in forestry and to promote

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[3]Roy M. Kottman, Directors Report, Ohio Agricultural Research and Development Center--1966 (Columbus, Ohio: The Ohio State University Press, 1966).

forestry in Ohio.[4] Professor William R. Lazenby, instructor of the courses offered in forestry, was appointed head of the new department.

In 1915, the department had seven instructors on its staff and had expanded to include graduate work leading to the degree Master of Science in Forestry. A bulletin for prospective students, issued by the department in 1915, perhaps best explains the goal of the new department.

> It is the aim of the Department of Forestry of the College of Agriculture to appeal to two classes of students. First, those who propose to make forestry their life work, and second, those who desire to acquaint themselves with certain branches of the subject but do not intend to become professional foresters.[5]

Professor Lazenby died in 1916, and no one replaced him. In 1917, Professor Otto Pflueger, second in rank to Professor Lazenby, left the department. In 1918, forestry was again merged with horticulture in the Department of Horticulture and Forestry, and the only courses taught were "Principles of Forestry" and "Farm Woodlots."

In 1924, Professor Norman Scherrer initiated a new program of study in forestry to cover the first two years of a four-year course commonly required for a baccalaureate degree in forestry. A 1924 announcement of this new program of study stated:

> Ohio students may now get professional training in forestry within their own state. A definite step forward has been taken in Ohio forest policy through the establishment of two years of professional forestry training at The Ohio State University.[6]

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[4]"The Five Brothers," Mimeograph reprinted from American Forests (Washington, D. C.: The American Forestry Association, January, 1947).

[5]College of Agriculture, Department of Forestry, The Ohio State University Bulletin Vol. XX, No. 1 (Columbus, Ohio: The Ohio State University Press, 1915), p. 2.

[6]Announcement of a New Course of Study in Forestry, The Ohio State University, College of Agriculture Bulletin (Columbus, Ohio: The Ohio State University Press, 1924), p. 1.

Similar two-year programs were conducted in subsequent years. In 1935, student enrollment in the two-year program reached a high of 45 freshmen and sophomores. In 1942, the two-year program was discontinued.

From 1942 to 1959, only basic non-professional forestry courses were offered by research scientists from the Department of Forestry, Ohio Agricultural Research and Development Center, who were employed on a part-time teaching basis.

From 1959 to 1966, general forestry courses were handled by Professors William Cowen and Robert Touse in the Department of Horticulture and Forestry. From 1966 to the establishment of the School of Natural Resources in 1968, two programs were initiated: (1) a four-year forest industries major leading to the degree Bachelor of Science in Agriculture and designed to provide training in the economics and management of wood-using industries, with a background in forestry and wood science and (2) a two-year pre-forestry program planned to assist students to obtain a baccalaureate degree in forest management at Michigan State University, with financial assistance by the Ohio State University, or at other forestry schools without financial aid.

Forestry instruction at The Ohio State University has had a varied history. However, the importance of instruction in forestry and natural resources finally has been fully recognized. All forestry instruction now has been placed within the School of Natural Resources.

The Ohio Biological Survey (1912)

In 1912, the Board of Trustees approved a proposition emanating from the Ohio Academy of Science for a biological survey of Ohio. The Ohio State University was to lead this survey, and the other scientific

institutions of the state were to cooperate.

The Ohio Biological Survey is an inter-institutional organization of Ohio colleges, universities, and certain park boards and museums which are interested in the conduct of research related to Ohio flora and fauna and the publishing of monographs resulting from such research. The current membership represents nearly half of the Ohio colleges and universities and three-fourths of those having biology departments. Member institutions pay $50 annual membership fees.

The object of the survey was originally stated to be:

> ...to secure accurate and detailed information as to the occurrence, distribution, and ecology of the animals and plants in Ohio for the benefit of the people in general and particularly for those engaged in school instruction, and to collect, identify and distribute material that may be of service in educational work.[7]

Professor Herbert Osborn was elected first director, and remained in this capacity until the time of his death in 1954. Professor Osborn also assumed the duties of editor and chairman of the executive committee.

In 1943, Professor Osborn had appointed Dwight M. DeLong to serve as associate director. Upon the death of Professor Osborn, Dr. DeLong was designated as acting director.

Soon after assuming the acting directorship, Professor DeLong called a meeting of the representatives from the member institutions whereupon he discussed the possibilities of either revitalizing the

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[7]Official proceedings of the May 28, 1912 meeting of the Board of Trustees, The Ohio State University.

Survey or discontinuing it. Judgments were divided between those wanting to continue the Survey and those wanting it dissolved. Another meeting was called, in conjunction with the annual meeting of the Ohio Academy of Science on April 19, 1956, to discuss the issue further.

At that time, the Natural Resources Institute at The Ohio State University had just been organized with Dr. Charles A. Dambach as its director. It appeared quite logical that the Ohio Biological Survey be placed in this institute and that Dr. Dambach should be made executive secretary. A study committee appointed at the April 19, 1956 meeting reviewed the tentative solution and requested ballot by mail that the above course of action be accepted by the board.

Dr. Dambach and acting director DeLong presented the report and recommendations of the administrative board of the Ohio Biological Survey to the Advisory Council of the Natural Resources Institute on January 28, 1957. The Advisory Council approved this proposal and agreed to the services of Dr. Dambach as executive secretary of the Survey in which position he is still serving. Dr. D. M. DeLong was elected as first chairman of the Advisory Board, and Dr. W. F. Hahnert as chairman of the Executive Committee. Action taken by the Board of Trustees on January 10, 1958, formalized the above decisions. Dr. James A. MacMahon of the University of Dayton is the current chairman of the Executive Committee and the Advisory Board.

The Ohio Biological Survey was reorganized under a new constitution and set of bylaws in 1957; however, the basic operative philosophy which was organized in 1912 is still maintained.

The Ohio Biological Survey publishes a series of bulletins and notes which deals largely with taxonomic or ecological works on Ohio

plants and animals.[8]

The Cooperative Extension Service (1914)

The purpose of agricultural extension work is to extend the learning of the land grant college off its campus. It is the educational arm of the agricultural colleges cooperating with the U. S. Department of Agriculture. "It completes the three-member team... instruction, research, and extension...that exemplifies the spirit of the land grant institution in public service to all citizens."[9]

The first extension-type education in Ohio was started by Norton S. Townshend when he conducted a lecture course for farmers at Oberlin College in 1854. The course was not fully successful, but it was the initial move for extension education.[10]

Developments between 1895 and 1905 included demonstrations conducted on farms by student members of the Agricultural Students Union and the organization of farm youth clubs by Albert B. Graham in Springfield Township, Clark County. In 1905, Mr. Graham was appointed Superintendent of Extension in the Department of Rural Economics at The Ohio State University.[11]

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[8]C. L. Metcalf, Syrphidae of Ohio, Ohio Biological Survey Bulletin I, (Columbus, Ohio: The Ohio State University, 1913), p. 4.

[9] Leo L. Rummell, One Hundred Years of Better Living through Education and Research in Agriculture and Home Economics (Columbus, Ohio: Ohio Agricultural Experiment Station, 1962), p. 51.

[10]Ibid., p. 51.

[11]Ibid., pp. 51-60

Activities of extension schools, boys' and girls' clubs, farmers' institutes, agricultural trains, agricultural bulletins, Farmers' Week, and exhibits at fairs were bringing extension education to Ohio farm families for years before the Congress passed the Smith-Lever Act in 1914 to establish the Cooperative Extension Service in Agriculture and Home Economics.

The Cooperative Extension Service has experienced a steady, progressive growth from its early days until it now is a powerful force in production agriculture as well as businesses allied with farming. It is also a leader with urban and rural families in homemaking and youth activities, community affairs, national agricultural policy, and is an exponent of conservation of natural resources. In recent years, extension specialists have been employed in such fields as fisheries and wildlife management, forestry, parks and recreation, and soil and water conservation.

The Cooperative Wildlife Research Unit (1936)

In the early thirties, despite an economic depression or because of it, there was deepening concern over the dwindling stock of renewable natural resources; a particular alarm was given to the state of migratory waterfowl and other depleted wildlife resources. This situation led to cooperative effort between certain universities, state conservation agencies, the then U. S. Biological Survey, and the Wildlife Management Institute to provide for a cooperative research unit program.

The need for the unit is perhaps best described by the original objectives, set forth in 1935, which have continued to date. These objectives are:

> ...(1) provide trained men to staff State game and fish agencies, (2) supply research to provide information of immediate use, (3) provide technical assistance to the States in solving their wildlife problems, and (4) provide conservation education through demonstrations, lectures, and publications.

At The Ohio State University a Cooperative Wildlife Research Unit was established in 1936. A similar Cooperative Fishery Unit was established in 1965.

The Conservation Laboratory for Teacher Training (1940)

A Conservation Laboratory for Teacher Training, one of the first in the nation, was started in 1940 by Ollie E. Fink, Ohio's first supervisor of conservation education in the State Department of Education. Ollie Fink, among others, recognized that the training of teachers was a chief limiting factor for the development of conservation education. A desirable setting for such education was thought to be a summer school in the field away from a campus.

The primary objective of the Laboratory was stated to be:

> ...to afford to teachers in service a chance to understand enough about man's place in nature so that the importance of conservation will be clear to them, developing a point of view based upon actual knowledge and experience.[13]

The curriculum was to be directed toward general concepts rather than scientific study. Thus, emphasis was given to information about conservation in general and in turn, to ways and methods of teaching conservation.

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[13]Ollie E. Fink, The Teacher Looks at Conservation (Columbus, Ohio: The Ohio Division of Conservation and Natural Resources, 1940).

The conservation laboratory started as a cooperative endeavor among 16 colleges and universities in Ohio. The cooperative arrangement was later reduced to five of the state's teacher education institutions and in 1968 to only one, The Ohio State University, under its School of Natural Resources. The formal cooperative structure was discontinued due to monetary and staffing difficulties. Students from other colleges and universities may still enroll for the course, however.

The Interdepartmental Conservation Curriculum (1945)

In response to the demand for personnel with some training in conservation areas, an interdepartmental conservation curriculum was developed in the College of Agriculture and Home Economics in 1945. This program provided an opportunity for interested students to obtain a broad exposure to problems and techniques for the solution of soil, water, and wildlife resources problems. The program largely utilized existing courses, and participating students graduated in Agriculture with specialization in one of the above areas. Participating departments included Agronomy, Agricultural Engineering, Agricultural Economics and Rural Sociology, Horticulture and Forestry, and Zoology and Entomology.

The 1945 bulletin of the College of Agriculture contained this statement about the program:

> By suitable selection of electives, the student may obtain an undergraduate major in conservation...The curriculum in conservation with an appropriate selection of electives aims to stress the contributions of the technical, economic, and social aspects of conservation and their interralation to human life and activities.[14]

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[14]College of Agriculture Bulletin 1945-46 (Columbus, Ohio: The Ohio State University Press, 1945), pp. 42-43.

For a few years prior to the development of the Natural Resources Institute, the program lost much of its identity by the discontinuance of the listing of separate curricula in the College of Agriculture Bulletin, and the referral of students to departments of specialization to develop programs of study.

However, when the Natural Resources Institute came into being, the major in conservation was again activated. The program was placed under the direction of the Curriculum Committee of the Natural Resources Institute. Under the new program, the pattern was the same as before. The students continued to major in conservation in a regular subject matter department, and various departments cooperated to provide the major courses of instruction.

The interdepartmental conservation curriculum was a major contributing factor in the development of the School of Natural Resources. Through this program, student demand was fully realized and faculty members began to envision the need for a more complete program in natural resources.

The Waste Treatment Laboratory - The Water Resources Center (1949)

A waste treatment laboratory was organized in 1949 as a branch of the Engineering Experiment Station. Its primary purpose was the study of sewage wastes prior to their entry into the Olentangy River. The scope of the laboratory's research became more comprehensive, and in 1958 the laboratory became known as the Water Resources Center.

One of the major functions of the center is administering research projects supported by the Office of Water Resources Research in the U. S. Department of the Interior. During fiscal year 1968, sixteen such

projects were underway with budgets totaling over $164,000. Another major research sponsor during fiscal year 1968 was the Higher Education Act of 1965 (Ohio Board of Regents) for projects in (1) developing work manuals for water and waste water plant operator training programs; (2) conducting a water and waste water plant operators' training program; and (3) conducting an urban pollution clinic.[15] During fiscal year 1968, fifty students were supported by the center, fifteen of whom were undergraduates

The Natural Resources Institute (1955)

On October 1, 1955, the Natural Resources Institute was created in The Ohio State University by action of the Board of Trustees. The purposes of the Institute were:[16]

1. Broadly, to stimulate and coordinate teaching and research in the conservation, development and wise use of natural resources.

2. To advise concerning the proper planning and integration of conservation subject matter in appropriate courses offered by established departments of instruction.

3. To promote the development of suitable major programs of study, both graduate and undergraduate, leading to possible careers in the field of conservation.

4. To seek a wider audience among students whose major occupations may afford opportunities to advance the understanding of conservation problems and methods.

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[15]Engineering Experiment Station, Annual Report (Columbus, Ohio: The Ohio State University, 1968), pp. 59-67.

[16]Official proceeding of the June 13, 1955 meeting of the Board of Trustees, The Ohio State University. Trustees Report, pp. 34-37.

The Natural Resources Institute was guided by an Advisory Council, later termed Administrative Board (see Appendix E). During its first four years of operation, the Institute was administered through the College of Agriculture and Home Economics. On December 5, 1958, the Board of Trustees of the University approved Faculty Rule 13.07[17] which changed the overall control of all institutes in the University from their respective College offices to the Research Council.

The Research Council was authorized by Faculty Rule 29.2719 to be:

> "responsible for making recommendations concerning the establishment, affiliation, and abolition of research institutes, centers, engaged in research activities, and other comparable organizations, and for determining the membership and authorities of their boards or governing bodies."[18]

During the existence of the Institute, more than one hundred faculty members representing nineteen departments and more than fifty persons from federal, state, and local resource agencies and organizations participated in one or more Institute programs.[19]

Some of the programs and activities conducted by the Institute include: (1) liaison with resource agencies, both state and federal as well as private; (2) conducting interdisciplinary seminars; (3) continuing education problems; (4) development of a natural resources reprint collection; (5) coordination of university training in natural

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[17]Official proceedings of the December 5, 1958 meeting of the Board of Trustees, The Ohio State University. Trustees Report, p. 500.

[18]Statutes, Bylaws, Rules (Columbus, Ohio: The Ohio State University, 1968), p. 12-32.

[19]Biennial Report of the Natural Resources Institute (Columbus, Ohio: The Ohio State University, July 1, 1965 to June 30, 1967), p. 7.

resources; (6) developing interdisciplinary training and research projects; and (7) administering the Ohio Biological Survey.[20]

On July 1, 1968, the Natural Resources Institute was dissolved in the light of the creation of the new School of Natural Resources. Dr. Charles A. Dambach was named director of the new school.

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[20] Ibid., pp. 7-31.

CHAPTER III

THE SCHOOL OF NATURAL RESOURCES TODAY

The School is responsible for establishing and offering professionally oriented programs leading to employment in natural resource management and science positions and for coordinating faculty effort in various disciplines from a variety of colleges in the development of its programs. It is guided in this mission by an all-university coordinating committee representative of the disciplinary groups interested in natural resources management. The programs offered are largely interdisciplinary in character and draw upon most of the resources of the University.

The objective of the instructional program is to develop personnel capable of filling managerial roles in all natural resource fields. A related objective is to promote an awareness by students in all areas of man's dependence on a finite resource base and of the need to manage those resources in a manner which assures a quality environment. Research and continuing education programs are related to these objectives.

Areas of Concentration

There are five major areas of concentration or specialization within the School of Natural Resources. These are: conservation and outdoor education, fisheries and wildlife management, forestry and forest industries, park administration and outdoor recreation resources, and resource development and conservation. A description of each of these areas follows.

Conservation and Outdoor Education

Several alternative though related educational specializations are possible in conservation and outdoor education: interpretive work, the work of park naturalists, with national, state, and metropolitan parks, museums interpreters, nature counselors; conservation education, information and education workers, conservation public relations personnel; teachers with special training in conservation and/or outdoor education through a double-degree program yielding a bachelor's degree in the College of Agriculture and Home Economics and another in the College of Education.

Fisheries and Wildlife Management

This program is designed for those students who plan to engage in fisheries or wildlife management privately or in the employ of state or federal fish and wildlife management agencies.

Forestry

The forestry program is divided into three sections: (1) forest industries, (2) forest science, and (3) pre-forestry. The forest industries program is designed to provide training in the economics and management of wood-using industries with a background in forest and wood sciences. This program is intended to prepare students for positions in the primary and secondary manufacturing of wood products as well as their marketing. The forest science curriculum offers intensive training in basic disciplines to prepare students for effective graduate study and research in forest science. The pre-forestry curriculum is planned to assist students in obtaining the baccalaureate degree in forest management at a school offering such degrees. At the end of two years,

pre-forestry students may elect to transfer to a college or university offering a four-year program in forest management or transfer to the forest industries or forest science program. The Ohio State University has entered into an agreement with Michigan State University whereby The Ohio State University will pay the Michigan State nonresident fees of a number of Ohio resident students who qualify for transfer to Michigan State University upon completion of the pre-forestry program at The Ohio State University.

Park Administration and Outdoor Recreation Resources

Career opportunities reflecting the demand for university trained recreation and park administrators are constantly expanding. Large numbers of professional positions are found in state and federal park and recreation agencies; urban, county, and regional recreation and park departments; private park and recreational systems; teaching and research positions in universities; and in planning and development of recreation and park systems. This program is intended to prepare students to enter employment in respect to the aforementioned demand.

Natural Resources Development and Conservation

This program is designed to prepare students who have a general interest in resources, who wish to develop specialization in natural resources other than those above, or who wish to prepare for graduate work in resource development and conservation in the private or public sector. The courses satisfying requirements for this program are purposely broad to enable development of a program tailored to the needs of each student.

Programs Available

The School of Natural Resources offers programs leading to the degree Bachelor of Science in Agriculture and the degree Master of Science in the Graduate School. Interdisciplinary Ph.D. programs may also be developed for specific areas of interest.

Bachelor of Science

This program is designed for students who are interested in preparation for any one of a variety of careers obtainable in the broad field of natural resources. Courses elected to fulfill the major may, with the approval of the advisor, be selected from outside the offerings of the School of Natural Resources.

Master of Science

The basic objective of the program leading to the degree Master of Science is to provide in-depth understanding of the relevant natural, social, and management sciences in their application to solving real-life natural resources problems and to the methods available to achieve optimum resource management in an integrated manner.

The program is designed primarily for the student who has substantive undergraduate preparation in a natural resources field or in a discipline which underpins specialization in a natural resources field or who has significant employment experience in a resource management field following undergraduate education. Specifically, the program seeks to provide:

1. In-depth knowledge and understanding of the basic natural, social, and management sciences principles which apply to a particular natural resource area of concern.

2. An understanding of the economic, social, and managerial factors which constrain and facilitate the application of these principles to natural resources problem solving.

3. In-depth understanding of the available body of knowledge relevant to the resource area of concern.

4. Competence in the methods of systematic, analytical, and experimental study of relevant resource management problems employing methodology derived from the natural, social, and management sciences.

5. Experience in solutions of real-life resource management problems through relevant research or managerial experience.

In pursuing these objectives, the program is flexible to provide students an opportunity to specialize in a particular natural resources area and to utilize courses from other disciplines which have meaningful relevance. A variety of instructional methods is employed to sharpen a student's analytical and problem-solving skills and to add depth to his knowledge.

Group study of case situations, team-teaching, and interdisciplinary seminars are emphasized in developing problem-solving skills. In-depth study of relevant basic science subject matter and independent research and thesis or report preparation are also required to develop research and communications competence.

The management of natural resources at all levels is necessarily a highly integrative process and promises to become more so as competition for limited resources increases. Understanding of the complex interrelationships of natural resources and of technologies for their systematic analysis is of special importance and will be emphasized. Graduate instruction in this area is thus necessarily largely inter-

disciplinary in character.

Doctor of Philosophy

Interdisciplinary Ph.D. programs may be developed under the direction of interdisciplinary faculty committees established with the approval of the Graduate School. The basic preparation for students in such programs must include an undergraduate of master's major in a discipline which underpins natural resources management or a natural resources specialty. These may include, but are not limited to, economics, geography, biology, fish or wildlife management, forestry, etc. The interdisciplinary program proposed must include in-depth course preparation in a related discipline or resources specialization and an interdisciplinary program of courses approved by the committee.

Courses

The courses initially approved by the Council on Academic Affairs for offering by the School of Natural Resources and those offered in cooperation with other departments are as follows.

201 Introduction to Conservation of Natural Resources U 3

The nature and scope of conservation problems; technical and socio-economic aspects of the solution of conservation problems.

202 Conservation Agencies U 3

History and responsibilities of governmental agencies and some private organizations for natural resource management; representatives of conservation agencies present programs and problems.

Coniferous Dendrology U 5
(Forest. 221)
[A study of the principal species of Gymnosperms in the United States with emphasis on identification, range, and silvical characteristics.]

Hardwood Dendrology U 5
(Forest. 222)
[A study of the principal species of Angiosperms in the United States with emphasis on identification, range, and silvical characteristics.]

Principles of Forestry U 5
(Forest. 310)
[History of American forests, their character and occurrence; underlying fundamentals of silviculture and forest management; introduction to forest management and protection.]

Silviculture U 5
(Forest. 321)
[A study of the methods of handling the forest on a permanent basis to assure the reproduction and proper growth of tree crops.]

Forest Mensuration U 5
(Forest. 323)
[The measurement of the forest and forest products.]

Forest Management U 5
(Forest. 325)
[A study of the practical problems of managing woodland property, both from the technical and the financial standpoint.]

Wood Structure and Properties U 5
(Forest. 431)
[The classification and identification of the important timber species based upon wood structure and properties; defects in wood; moisture relationships; physical and chemical properties.]

Manufacturing Forest Products U 5
(Forest. 432)
[Intensive study of the manufacturing industries based on wood products or products derived from wood by chemical and other means.]

Analysis of Forest Industry Management U 5
(Forest. 433)
[A survey of the common problems encountered by managers of the wood-using industries; emphasis on sources of information and methods of solution.]

489 Field Work in Conservation U 3

The student must secure approval of adviser prior to employment and submit a final written report.

510 Natural History of Ohio U G 5

Geology and soils, vegetation types and regions; major wildlife; field work on ecology, observation techniques, and identification skills.

Conservation of Natural Resources U G 4
(Geog. 530)
(Offered in cooperation with the School of Natural Resources)
[Economic and geographic appraisal of regional and national planning for resource utilization.]

Individual Studies U G 2-5
(Forest. 593)
[Special problems in the field of forestry and forest products.]

610 Interpretive Work U G 5

Professional course for park naturalists, teachers, and outdoor education workers; history of interpretive work; philosophy and objectives; case studies of programs; interpretive techniques; evaluation.

611 Field Course in Conservation and Outdoor Education U G 6

Study and field work in natural history, resource management, and conservation and outdoor education.

620 Management of Fisheries U G 5

Fisheries resource management problems and programs including biological, economic, and social factors of local, national, and international importance.

621 Principles of Wildlife Management U G 5

An introduction to the social, economic, and biological principles related to the management and utilization of wildlife resources.

622 Field Laboratory in Renewable Natural Resources Management U G 15

Field experience in identifying and solving problems in the management of renewable natural resources; work in a variety of habitats using appropriate tools and techniques.

640 Natural Resources Problems, Programs and Policies U G 4

An analytical study of contemporary and future problems of natural resources conservation and the programs and policies related to their solution.

641 Interactions in Natural Resources Management U G 4

Impact of man's activity on natural resources; inter-relationships between resources and the physical and social environment and the prospects for effective resource management.

693 Individual Studies U G 2-5

694 Group Studies U G 2-5

Group study on nature and management of natural resources encompassed in one of the following areas.

694.01 Conservation and Outdoor Education
694.02 Fisheries and Wildlife
694.03 Forestry and Forest Industries
694.04 Parks and Recreation
694.05 Resource Development and Conservation
694.06 Unclassified

Outdoor Education and Camp Administration U G 3
(Phys. Ed. 770)
(Offered in cooperation with the School of Natural Resources)
[Introduction to the principles, status, and administration of outdoor education and camping.]

Public Recreation: Its Organization and Administration U G 3
(Phys. Ed. 771)
(Offered in cooperation with the School of Natural Resources)
[Consideration of common patterns of organization of community recreation found in American cities, large and small, under municipal school and other auspices.]

785 Research Methods in Natural Resources Management — U G 4

Research design; experimental procedures; information-gathering tools including reporting units for resource-related data; statistical methods; and procedures for analysis of data.

897 Interdepartmental Seminar in Natural Resources — G 1

Seminar in resources management offered cooperatively by the School of Natural Resources and the Departments of Agricultural Economics, Agricultural Engineering, Agronomy, Botany, Entomology, Geography, Horticulture, Microbiology, and Zoology.

999 Research in Natural Resources — G Arr.

Research for thesis or dissertation purposes only.

Research in Forestry — G Arr
(Forest. 999)
[Research for thesis and dissertation purposes only.]

Faculty

The faculty of the School of Natural Resources, beginning with the autumn quarter, 1969, when courses and an M.S. program were offered for the first time, is listed below. The digits following each name indicate areas of responsibility:

1. Resident Instruction
2. Ohio Agricultural Research and Development Center
3. Cooperative Extension Service

Professors

Charles A. Dambach, Ph.D. (The Ohio State University); Director of the School of Natural Resources and Professor, Natural Resources.[1,2,3]

William F. Cowen, Jr., M.F. (Yale University); Professor, Forestry (transferred from the Deparment of Horticulture and Forestry).[1,3]

Gordon E. Gatherum, Ph.D. (Iowa State University); Professor, Forestry, School of Natural Resources; Chairman, Department of Forestry, Ohio Agricultural Research and Development Center, and Professor Forestry.[1,2,3]

William F. Hahnert, Ph.D. (Johns Hopkins University); Administrator of the Ohio Biological Survey, and Professor Emeritus, Ohio Wesleyan University.[1]

Howard B. Kriebel, Ph.D. (Yale University); Professor, Forestry, Ohio Agricultural Research and Development Center.*[1,2]

Carl S. Johnson, Ph.D. (The Ohio State University); Professor, Conservation and Outdoor Education (transferred from the College of Biological Sciences, Faculty of Population and Environmental Biology).[1]

Harold Schick, M. S. (Michigan State University); Professor, Park Administration and Outdoor Recreation.[1]

Robert D. Touse, M.S. (Michigan State University); Professor, Forestry (transferred from the Department of Horticulture and Forestry).[1,3]

Associate Professors

E. E. Good, Ph.D. (The Ohio State University); Associate Professor, Wildlife Management (joint appointment with the College of Biological Sciences).[1]

M. M. Larson, Ph.D. (University of Washington); Associate Professor, Forestry, Ohio Agricultural Research and Development Center.*[1,2]

Walter T. Momot, Ph.D. (University of Michigan); Associate Professor, Fisheries Management (joint appointment with the College of Biological Sciences).[1]

John P. Vimmerstedt, D.F. (Yale University); Associate Professor, Forestry, Ohio Agricultural Research and Development Center.*[1,3]

Frank W. Whitmore, Ph.D. (University of Michigan); Associate Professor, Forestry, Ohio Agricultural Research and Development Center.*[1,3]

Assistant Professors

Robert Earl Roth, Ph.D. (University of Wisconsin); Assistant Professor, Conservation and Outdoor Education.[1]

Thomas M. Stockdale, M.S. (The Ohio State University); Assistant Professor, Wildlife.[1,3]

Bart A. Thielges, Ph.D. (Yale University); Assistant Professor, Forestry, Ohio Agricultural Research and Development Center.*[1,3]

Albert R. Vogt, Ph.D. (University of Missouri); Assistant Professor, Forestry, Ohio Agricultural Research and Development Center.*[1,3]

Instructors

John M. Pierce, M.S. (Syracuse University); Instructor, Park Administration and Outdoor Recreation.[1,3]

*New courtesy appointments in the School of Natural Resources to integrate research staff at the Ohio Agricultural Research and Development Center with the forestry program in the School of Natural Resources.

APPENDIXES

APPENDIX A

NAME AND TENURE OF FACULTY OR STAFF MEMBERS WITH OVER TWENTY YEARS OF SERVICE

APPENDIX A

NAME AND TENURE OF FACULTY OR STAFF MEMBERS WITH OVER TWENTY YEARS OF SERVICE

Name	Year Starting	Total years tenure as of 1969
Charles A. Dambach	1942	27

APPENDIX B

MAJOR PUBLICATIONS OF THE FACULTY

APPENDIX B

MAJOR PUBLICATIONS OF THE FACULTY

Cowen, W. F., Jr., T. M. Stockdale, and Ralph W. Moore. "Planning Guide - Outdoor Recreation Facilities." Bulletin 441, Cooperative Extension Service, Ohio State University

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APPENDIX C

ORIGIN OF THE OHIO STATE UNIVERSITY NATURAL RESOURCES INSTITUTE

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ORIGIN OF THE OHIO STATE UNIVERSITY NATURAL RESOURCES INSTITUTE

(The following resume of the creation, purposes, and organization of the Natural Resources Institute is taken verbatim from the minutes of the June 13, 1955 meeting of the Board of Trustees of The Ohio State University, pages 34-37 Underscored headings have been added)

Report of Vice President Frederick Heimberger:

Upon request of President Bevis, Vice-President Heimberger presented the following report and recommendations relative to the establishment of a Natural Resources Institute at the Ohio State University.

At its meeting in September, 1954, the Board of Trustees requested the President to give his attention to the development of a program designed to bring the full resources of the University to bear upon the broad problem of the conservation, development and wise use of natural resources in the State of Ohio. He then appointed an advisory committee composed of Dean Gordon B. Carson, Dean Leo L. Rummell and Vice President Frederick Heimberger, Chairman. This committee met frequently and discussed the problem with many interested persons, both on and off campus. It also took into account an earlier study of the future of the Franz Stone Institute of Hydrobiology and the facilities at Gibraltar Island made by a committee under the chairmanship of Dean H. Paul Hudson.

With the President's approval, the following statement of purposes, policy and organization has now been approved by the Council on Instruction and the Faculty Council. It now comes before you for final consideration and possible approval.

1. The conservation, development and proper use of natural resources is and must be a matter of grave concern to the people of Ohio. This concern is being felt more and more keenly as the population of the state increases and the trend toward industrialization continues.

2. The problem is a very broad one, reaching into agriculture, industry, engineering, recreation and urban development. It has many social implications of major importance.

3. The Ohio State University should bear a heavy responsibility for taking the lead in determining facts and giving direction to the conservation and developmental programs which appear to be essential to the public interest.

4. In many and varied fields this University is already making a substantial contribution. Our present efforts, however, are spotty and lack integration. They also fail to take full advantage of the possibilities for cooperative ventures with off-campus agencies such as

the Agricultural Experiment Station, the Department of Natural Resources of the State of Ohio and the Hydrologic Erosion Experiment Station of the national government. In addition, they are not related closely enough to the many associations of interested citizens whose activities and programs might be strengthened greatly through scientific guidance.

5. Perhaps the most noteworthy of our efforts in the field of conservation, the Stone Institute of Hydrobiology, has been set apart from the University by distance and what is more important, by administrative separation from the normal pattern of college and departmental organization. This separation has had a decided effect upon the usefulness of what should be an important center for the training of students and for research in many fields.

6. In certain areas of teaching and research related to conservation our approach has been rather narrowly specialized with the result that the larger problem with all of its many ramifications has not received the attention it deserves.

Recommendation of the Faculty Council and Council on Instruction

It is now recommended that effective at the close of the Summer Quarter 1955, upon recommendation of the Faculty Council and the Council on Instruction, the following steps be taken by the Board of Trustees.

1. That a Natural Resources Institute be established as a part of the Ohio State University.

   (a) Purposes

      1. Broadly to stimulate and coordinate teaching and research in the conservation, development and wise use of natural resources.

      2. To advise concerning the proper planning and integration of conservation subject matter in appropriate courses offered by established departments of instruction.

      3. To promote the development of suitable major programs of study, both graduate and undergraduate, leading to possible careers in the field of conservation.

      4. To encourage and assist research within the University or in cooperation with other public agencies, foundations and interested groups.

      5. To seek a wider audience among students whose major occupations may afford opportunities to advance the understanding of conservation problems and methods.

6. To stimulate thought and effort in conservation throughout the State, using short courses, conferences, television, printed materials and other appropriate means of communication.

7. To establish close cooperative relationships with other public agencies such as the Department of Natural Resources, the Agricultural Experiment Station, the State Department of Education, and appropriate branches of the national government.

8. Through the Executive Director, to have administrative responsibility for such special teaching and research facilities as may be designated by the President.

(b) Organization

1. While the proposed Institute is designed to be University-wide in scope and services, it shall be located for administrative purposes within the College of Agriculture.

2. The principal officer shall be an Executive Director responsible directly to the Dean of the College.

3. The Institute shall have an Advisory Council including the Deans of the Graduate School and the Colleges of Agriculture, Arts and Sciences, Commerce and Administration, Education and Engineering and the Director of the Research Foundation or their designated representatives. It shall also include such representatives of the Department of Natural Resources, the Agricultural Experiment Station or other related agencies as the President may deem advisable. The Director of the Institute shall serve as its Secretary.

2. That the Department of Hydrobiology be abolished and that its present courses of instruction be returned to the appropriate teaching and research departments on the campus.

3. That the present teaching and research staff of this department be fully protected through incorporation within the proper campus department or departments.

4. That the name of the Franz Theodore Stone Institute of Hydrobiology be changed to the Franz Theodore Stone Laboratory and that the use of its physical facilities be placed under the control of the Executive Director of the Natural Resources Institute. It is understood that the responsibility for the maintenance, care and supervision of the buildings, grounds, boats and equipment shall remain as at present under the control of the Director of the Physical Plant.

5. That steps be taken to assure the most effective possible uses of the Laboratory as a center for University teaching and research during the open months of the year with the understanding, however, that it will be used only as a laboratory outpost or collecting station for exceptional research problems during the remainder of the year.

6. That use of other related facilities now in being or yet to be provided may be placed under the control of the Executive Director of the proposed Institute at the discretion of the President.

Action of the Board of Trustees:

Upon motion of Mr. Ketner, seconded by Judge Gorman, the Board by unanimous vote approved the above recommendations.

SUBSEQUENT CHANGES AND PRESENT ORGANIZATION

Organization on Membership Basis

The Board of Trustees on December 5, 1958 adopted a uniform procedure for the establishment and administration of institutes (See Faculty Rule 11.1101, 13.07 and 13.09). In keeping with these procedures and a desire for establishing a basis for faculty membership in the Institute, the then existing Advisory Council empowered the Director to proceed with formulating a plan providing for such membership. A committee comprising the following persons selected by their respective deans was organized for this purpose: Professor John H. Sitterley, Agriculture and Home Economics; Professor Harry H. Weiser, Arts and Sciences; Professor Guy-Harold Smith, Commerce and Administration; Professor R. H. Eckelberry, Education; Professor George P. Hanna, Engineering; Karl S. Krill, Associate to the Vice President, Instruction and Research, and Charles A. Dambach, Director of the Natural Resources Institute, ex officio. This committee prepared a plan which subsequently was approved with modifications herein incorporated by interested faculty members at a meeting called for the purpose of its adoption on October 29, 1959. The provisions of this plan with subsequent modifications is as follows:

Purposes of the Natural Resources Institute

1. Broadly, to stimulate and coordinate teaching and research in the conservation, development and use of natural resources.

2. To advise concerning the proper planning and integration of natural resources conservation subject matter in appropriate courses offered by established departments of instruction.

3. To promote the development of suitable programs of study, both graduate and undergraduate, leading to possible careers in the field of natural resources management.

4. To encourage and assist research within the University or in cooperation with public agencies, foundations, and interested groups.

5. To seek a wider audience among students whose major occupations may afford opportunities to advance the understanding of conservation problems and methods.

6. To stimulate thought and effort generally in the field of natural resources management using short courses, conferences, television printed materials and other appropriate means.

7. To establish close cooperative relationships with such state agencies as the Department of Natural Resources, the Agricultural Experiment Station, The Department of Industrial and Economic Development, the Department of Education, and appropriate national agencies such as the U. S. Forest Service, Fish and Wildlife Service, Geological Survey, and Soil Conservation Service.

8. Through the Director to have administrative responsibility for such special teaching facilities and research programs and facilities as may be designated by the President, such as the inter-institutional program of the Ohio Biological Survey and the facilities of the Franz Theodore Stone Laboratory. By action of the Board of Trustees on January 17, 1964, responsibility for use of the facilities of the Franz Theodore Stone Laboratory was assigned to the College of Agriculture and Home Economics, effective February 1, 1964.

Organization

Administrative Board

The Natural Resources Institute is to be University-wide in scope and service. It is administered through the Vice President for Research, by an administrative board -- "having such membership and authority as determined by the Council on Research and approved by the Faculty Council and the Board of Trustees." (Faculty Rule 13.09)*. The administrative board shall be comprised of five voting members: two appointed by the Council on Research, two elected from the Institute membership, and the Dean of the Graduate School, ex officio. Membership on the Administrative Board shall be for four year terms except that the first board shall be comprised of one member elected for two-years and one for four years and that one member shall be appointed for two years and one for four years so that, at two-year intervals, thereafter, one member shall be elected and one appointed for a four year term.

Director of the Institute

The principal officer of the Institute shall be a director responsible to the Vice-President for Research.* The Director of the Institute shall be appointed by

* Administrative attachment at the time of adoption of this plan was to the office of the Vice President for Instruction and Research.

the Board of Trustees upon recommendation of the President of the University. The Director shall be responsible for:

1. Providing active leadership in fulfilling the purposes of the Institute.

2. Administering the general affairs of the Institute. This shall include:

   (a) Making and keeping records of all proceedings of the Institute.

   (b) Making periodical reports to the membership, the Administrative Board and such other reports as may be requested by the University Administration.

   (c) For presiding at meetings of the Institute.

   (d) For appointment of committees.

3. On behalf of the Institute members and through appropriate administrative channels, seeking funds for carrying on projects approved by the Administrative Board.

Membership

Membership in the Institute shall be open to interested faculty members and to other persons who are actively engaged in educational, research or administrative activities in the natural resources area. The principal criterion for membership shall be a desire for active participation in Institute programs. Membership in the Institute shall be determined by vote of the Administrative Board, acting on nominations by the Committee on Membership and Nominations. Nominations may be made by the Committee on its own initiative, or by approving the applications of persons desiring membership. All members of the Institute may participate actively in Institute programs and serve on committees. Only faculty members, however, are eligible for election to the Administrative Board or to vote on Institute business.

Committees

The work of the Institute will be carried out largely by committees or by other persons and groups through such funds and facilities as are made available for approved projects. The standing committees of the Institute shall be: (1) Curriculum and Education, (2) Membership and Nomination, (3) Program, and (4) Research. Additional committees may be established from time to time by the Administrative Board. The length of service on committees is to be determined by the Director with due consideration to the wishes of the persons involved. The Director may designate committee chairmen, meet regularly with committees, and keep a record of committee proceedings.

The Curriculum and Education Committee shall: (a) formulate plans and recommend action designed to stimulate and coordinate teaching in the conservation,

development, and use of natural resources; (b) advise concerning the proper planning and integration of natural resources subject matter in appropriate courses offered by established departments of instruction; (c) promote the development of graduate and undergraduate programs of study leading to possible careers in the field of natural resources management; (d) advise with the Director concerning the best use of educational facilities under the control of the Institute; (e) report annually to the membership and through the annual report of the Director, its activities, accomplishments, plans, and recommendations.

The Membership and Nomination Committee shall have five members, appointed by the Director. The principal duties of the Committee shall be: (a) to encourage and approve membership in the Institute of qualified persons, (b) to nominate a slate of candidates for election to the Administrative Board at each period. (c) to conduct an election of representatives to the Administrative Board by mail ballot of the Institute membership, (d) to carry on such other membership activities as may be approved by the Administrative Board.

The Program Committee shall be responsible for formulating plans, recommending action, and assisting the Director in conducting programs designed to: (a) stimulate thought and effort in the field of natural resources management generally, using short courses, conferences, television, printed materials, and other appropriate means, (b) establish close cooperative relationships with appropriate organizations and agencies; (c) make the best use of facilities as may be available to the Institute for the aforementioned purposes. It shall plan the annual membership meeting.

In determining membership on this committee, the Director shall attempt to achieve representation of the areas of interest concerned both from faculty and non-faculty groups.

The Committee shall report annually to the membership and the Director a record of its activities, accomplishments, plans and recommendations.

The Research Committee of the Institute shall be composed of persons especially interested in the conduct of research in natural resources management. The Committee shall be responsible for developing a plan of action and making recommendations concerning: (a) stimulating and coordinating research in the conservation, development, and use of natural resources. (b) encouraging and assisting research within the University or in cooperation with public agencies, foundations, and interest groups.

The Committee shall also advise the Director concerning the execution of any research programs for which the Institute is or may be made responsible (such as the Ohio Biological Survey), and the best use of such special research facilities for which the Institute is or may become responsible.

The Committee shall report annually to the membership and the Director concerning its activities, accomplishments, plans, and recommendations.

Meetings

COMMITTEE MEETINGS

Committee meetings shall be held as often as necessary to carry out committee responsibilities. The Curriculum Committee shall meet at least once in the Autumn Quarter each year for the purposes of reviewing interdepartmental curricular programs in natural resources management and making appropriate course and program recommendations to the proper departments of instruction and college committees on instruction. All other committees shall meet at least once each year. Each committee shall keep accurate minutes of its proceedings and such minutes shall become permanent records of the Institute

MEMBERSHIP MEETINGS

There shall be an annual meeting of the members of the Institute and such additional meetings as are needed. At the annual meeting, the reports of the standing committees and the Director and such other reports as may be called for shall be presented. The Program Committee shall be responsible for planning the program for the annual meeting. At least 30 days notice concerning the time and place of the annual meeting shall be sent to all members.

Other meetings may be called by the Director and shall be called upon the written request of any ten members of the Institute.

Changes in the Plan

Proposed changes in the plan for operation of the Natural Resources Institute may be initiated by any member or group of members. Proposed changes in the plan must be submitted in writing to the Director at least 60 days before the annual meeting or any special meeting called for the purpose of considering such changes to facilitate study of the proposal by the membership and the Administrative Board. Members shall be given at least 30 days notice of proposed changes before they can be acted upon. Changes approved by the membership which are not in conflict with the purposes of the Institute and University rules shall become effective upon approval by the Administrative Board.

The foregoing plan was formally approved by unanimous vote of interested faculty members at a meeting conducted by the Advisory Council of the Institute on Thursday, October 29, 1959, as recorded in the Minutes of that meeting.

APPENDIX D

THE ADVISORY COUNCIL AND THE ADMINISTRATIVE BOARD OF THE NATURAL RESOURCES INSTITUTE

APPENDIX D

THE ADVISORY COUNCIL AND THE ADMINISTRATIVE BOARD OF THE NATURAL RESOURCES INSTITUTE

In 1955, when the Natural Resources Institute came into being, an Advisory Council was created which included the Deans of the Graduate School and the Colleges of Agriculture, Arts and Sciences, Commerce and Administration, Education, Engineering, and the Director of the Research Foundation or their designated representatives. Also included were representatives of the Department of Natural Resources and the Agricultural Experiment Station, or other related agencies chosen by the President. The director of the Institute (Dr. Charles Dambach) served as secretary to the Council.

In 1960, the Faculty Council and the Board of Trustees issued a rule requiring the establishment of an Administrative Board or Advisory Board for all institutes (Faculty Rule 13.09). Consequently, the Advisory Council was dissolved.

The new Administrative Board was to be comprised of five voting members: two appointed by the Council on Resources, two elected from the Institute membership, and the Dean of the Graduate School, ex officio. Each member of the Board was to serve a four-year term with the exception of one elected member of the initial board who would serve for two years while the other elected member served four years. Hence, thereafter at two-year intervals, one member would be elected and one appointed for a four-year term.

Members of the Administrative Board by Biannums Served

Member	Biannum Served							
	1960-61	61-62	62-63	63-64	64-65	65-66	66-67	67-68
Richard H. Armitage Dean, Graduate School			x	x	x	x	x	x
Richard H. Bohning Associate Dean College of Agr. and Home Ec.							x	x
*Charles A. Dambach Sec., Adm. Board, Dir., Nat. Res. Inst.	x	x	x	x	x	x	x	x
*A. B. Garrett President, Research			x	x	x	x	x	x
Robert S. Green Assoc. Dean, Exec. Dir. Engr. Exper. Sta. College of Engr.	x	x	x	x				
George P. Hanna Dir., Water Res. Center					x		x	x
Henry L. Hunker Assistant Dean Coll. of Comm. and Adm.	x	x	x	x	x	x	x	x
*Karl Krill Assoc. to Vice Pres. Instruc. and Research	x	x	x					
Tony J. Peterle Professor Dept. of Zool. and Entom.							x	x
Kenesaw S. Shumate Acting Director Water Res. Center						x		
John H. Sitterley Professor Dept. of Agr. Econ. and Rur. Soc.	x	x	x	x	x	x		

Member	Biannum Served							
	1960-61	61-62	62-63	63-64	64-65	65-66	66-67	67-68
Charles H. Summerson Professor Dept. of Geology	x	x	x	x	x	x		
Everett Walters Dean, Graduate School	x	x						

* Non-voting Members.

APPENDIX E

MEMBERS OF THE CURRICULUM COMMITTEE OF THE NATURAL RESOURCES INSTITUTE, AND YEARS SERVED

APPENDIX E

MEMBERS OF THE CURRICULUM COMMITTEE OF THE NATURAL RESOURCES INSTITUTE, AND YEARS SERVED

Member	Year						
	1958-1959	59-60	60-61	62-63	63-64	64-65	65-67
S. R. Anderson Dept. of Agronomy	x	x					
K. W. Cosens Civil Engineering	x	x					
W. F. Cowan Dept. of Forestry	x	x	x				
Charles A. Dambach Natural Resources Inst. (ex officio)				x	x	x	x
R. H. Eckelberry Bureau Educational Res.	x	x					
E. E. Good Zoology and Entomology	x	x		x	x		x
George P. Hanna, Jr. Civil Engineering			x	x	x	x	x
Frank L. Himes Dept. of Agronomy			x	x	x		x
N. Holowaychuk Dept. of Agronomy	x	x					
F. S. Howlett Dept. of Horticulture	x	x					
Robert E. Jewett Education			x				
Carl S. Johnson Zoology and Entomoloty	x						

Member	Year						
	1958-59	59-60	60-61	62-63	63-64	64-65	65-67
Edgar T. Shaudys Agricultural Economics and Rural Sociology			x	x	x	x	x
John Sitterley Agricultural Economics and Rural Sociology	x	x					
Guy-Harold Smith Dept. of Geography	x	x	x				
Israel Stollman City and Regional Planning		x	x	x	x	x	x
C. H. Summerson Dept. of Geology	x	x					
Edward J. Taaffee Dept. of Geography					x	x	x
Robert Touse Horticulture and Forestry				x	x		x
Malcolm Weiss Dept. of Geology			x	x	x	x	x
A. J. Wright				x			

APPENDIX F

ADMINISTRATIVE ACTION RELATIVE TO THE DEVELOPMENT OF THE SCHOOL OF NATURAL RESOURCES

APPENDIX F

ADMINISTRATIVE ACTION RELATIVE TO THE DEVELOPMENT OF THE SCHOOL OF NATURAL RESOURCES

October 4, 1965. In proposing the creation of a College of Biological Sciences, the Academic Board suggested in their communication to the Council on Instruction that there needed to be created in the College of Agriculture a Department of Natural Resources.

December 14, 1966. The Administrative Board of the Natural Resources Institute recommended the establishment of a Department of Natural Resources in the College of Agriculture and Home Economics.

December 22, 1966. Authorization from Vice President John E. Corbally, Jr. for Dr. Roy M. Kottman, Dean of the College of Agriculture and Home Economics, to establish a committee to prepare a proposal for a Department of Natural Resources.

January 16, 1967. Dean Kottman requested the persons listed below to constitute a committee for the purpose of developing the proposal.

Ernest E. Good, Associate Professor of Zoology, College of Biological Sciences
Charles L. Mand, Professor, Department of Physical Education for Men
Francis B. McCormick, Professor and Acting Chairman, Department of Agricultural Economics and Rural Sociology, College of Agriculture and Home Economics

Edward J. Taaffe, Professor and Chairman, Department of Geography, College of Commerce and Administration
Garth W. Volk, Professor and Chairman, Department of Agronomy, College of Agriculture and Home Economics
Charles A. Dambach, Director, Natural Resources Institute, Office of Research. Chairman.

February 1, 1967. The committee submitted to Dean Kottman a proposal for the creation of a Department of Natural Resources.

February 3, 1967. Dean Kottman submitted the proposal to Dr. John E. Corbally, Jr., Vice President and Provost of the University. Dr. Corbally requested the Biological Sub-committee of the Council on Academic Affairs to review the proposal. This sub-committee concluded that the proposal as submitted was too broad in its concept to fit the definition of a department. Dr. Corbally thereupon requested that a new proposal be drawn up within the framework of a school.

September, 1967. A new abbreviated proposal cast under the framework of a school was prepared and submitted to Dr. Corbally for consideration by the Council of Academic Affairs.

November 20, 1967. The Council on Academic Affairs approved the proposal for the College of Agriculture and Home Economics to establish a School of Natural Resources. The council forwarded the proposal to the Faculty Council for their consideration.

December 12, 1967. The Faculty Council approved and transmitted to the Board of Trustees the recommendation of the Council on Academic Affairs that the School of Natural Resources be established.

February 8, 1968. The Board of Trustees approved the recommendations that a School of Natural Resources be established effective July 1, 1968.

February 29, 1968. Approval was granted for the appointment of a Director of the School. Dr. Charles A. Dambach was named as Director effective July 1, 1968.

April 5, 1968. Vice President and Provost John E. Corbally, Jr. appointed the following persons to serve on the Advisory Committee to the School of Natural Resources. This committee held its first meeting on May 16, 1968 and has had subsequent meetings as needed.

John S. Bottom, Associate Professor, Agricultural Economics
Patrick R. Dugan, Associate Professor, Microbial and Cellular Biology
George P. Hanna, Professor, Civil Engineering Department, and Director, Water Resources Center
Robert W. Howe, Associate Professor, Education
Henry L. Hunker, Director, Center for Community and Regional Analysis
Charles L. Mand, Professor, Physical Education
Eugene O. McLean, Professor, Agronomy
Charles H. Sommerson, Associate Professor, Geology
George B. Toby, Associate Professor, Landscape Architecture

July 1, 1968. The School of Natural Resources came into being on July 1, 1968. Charles A. Dambach was named as Director of the School. The School was headquartered in

Lord Hall.

Thereafter, undergraduate and Master of Science degree programs were developed in consultation with interested faculty members throughout the university. Upon approval of the Advisory Committee, program proposals were submitted through regular channels for approval. On June 3, 1969, the Faculty Council approved an M.S. program effective with the autumn quarter 1969. Earlier the Council on Academic Affairs recommended broadening the membership of the Advisory Committee and the later submission of proposed programs reflecting a broader program than originally conceived. The Council on Academic Affairs approved new courses in natural resources as listed in the text under Courses. These courses included certain courses previously offered through the Departments of Agricultural Economics, Education and Horticulture and joint listing of certain courses with the School of Physical Education and the Department of Geography. The courses in forestry were transferred from the Department of Horticulture to the School of Natural Resources.

APPENDIX G

REPORTS AND PUBLICATIONS OF THE NATURAL RESOURCES INSTITUTE

APPENDIX G

REPORTS AND PUBLICATIONS OF THE NATURAL RESOURCES INSTITUTE

Conference and Seminar Proceedings

1. THE OHIO MID-CENTURY GOVERNOR'S CONFERENCE ON NATURAL RESOURCES (May 14-15, 1958)
   Natural Resources Institute, O.S.U., The Ohio Dept. of Natural Resources, The Div. of Econ. Devel. and Publicity Ohio Dept. of Commerce, The Ohio Chamber of Commerce.

2. PROCEEDINGS OF ALL OHIO CONFERENCE MEETING OUTDOOR RECREATION NEEDS FOR THE 60's (May 18-19, 1961)
   Natural Resources Institute and The Office of Community Development, O.S.U.

3. DEVELOPING EFFECTIVE WATER MANAGEMENT SYSTEMS TO MEET INCREASING DEMAND (1961-1962)
   Natural Resources Institute, O.S.U.

4. SAFEGUARDING THE NATION'S WATER RESOURCES, with two papers on OUTDOOR RECREATION PROGRAMS (1962-1963)
   Natural Resources Institute, O.S.U.

5. SAFEGUARDING AIR RESOURCES; OHIO PLANS FOR OUTDOOR RECREATION; CONSERVATION IN THE COLLEGE PROGRAM; TRAINING OF CONSERVATIONISTS (1963-1964)
   Natural Resources Institute, O.S.U.

6. THE INTERACTION OF URBANIZATION AND THE MINERAL INDUSTRIES (1965)
   Natural Resources Institute, O.S.U.

7. THE PRICE OF AESTHETICS AND NATURAL BEAUTY (May 24, 1966)
   Natural Resources Institute, O.S.U.

8. INSTITUTIONAL MECHANISMS FOR MANAGING NATURAL RESOURCES (1967-1968)
   Natural Resources Institute, O.S.U.

Reprints of Technical Reports and Special Studies

1. AGE AND GROWTH STUDIES OF CHANNEL CATFISH IN WESTERN LAKE ERIE
   By Gerardus C. deRoth; Journal of Wildlife Management; pp. 280-286; April, 1965.

2. AN APPROACH TO SOME PROBLEMS OF SECONDARY PRODUCTION IN THE WESTERN LAKE ERIE REGION
   By Charles C. Davis; Limnology and Oceanography; pp. 15-28; January, 1958.

3. A CHART FOR THE DEVELOPMENT OF CONSERVATION CONCEPTS IN THE ELEMENTARY GRADES
Available from The Ohio Forestry Association, Inc. Price: $1.00.

4. CONSERVATION EDUCATION FOR AMERICAN YOUTH
College of Education, O.S.U.; 1950; pp. 1-34.

5. DAMAGE TO FISH FRY BY CYCLOPOID COPEPODS
By Charles C. Davis; Ohio Journal of Science; pp. 101-102; March, 1959.

6. DEVELOPING CONSERVATION CONCEPTS: A GUIDE TO THE USE OF FILM-STRIPS FOR TEACHING CONSERVATION IN OHIO SCHOOLS
A Cooperative project of the Natural Resources Institute, O.S.U., and the Ohio Dept. of Education, 1963; pp. 1-112.

7. DEVELOPMENT OF A SYSTEM FOR CONTROLLING DISSOLVED-OXYGEN CONTENT OF WATER
By Donald I. Mount; Transactions of the American Fisheries Society; pp. 323-327; July, 1961.

8. FOREST RESOURCES OF SOUTHEASTERN OHIO
By W. G. McGinnies, K. L. Quigley and O. D. McCauley, O.S.U., Natural Resources Seminar; pp. 1-18; February 8, 1960.

9. IMPROVING LEADERSHIP IN CONSERVATION EDUCATION
By Charles A. Dambach and Robert Finlay; Ohio Conservation Bulletin; pp. 1-993; September, 1957.

10. INTERDEPARTMENTAL TEACHING OF CONSERVATION AT THE OHIO STATE UNIVERSITY
By David L. Hanselman, Natural Resources Institute, O.S.U.; pp. 1-279. Price: $1.00.

11. NEEDED WILDLIFE RESEARCH
By Charles A. Dambach; Ohio Journal of Science; pp. 106-112; May, 1963.

12. OHIO STUDIES WITH REPELLENT MATERIALS, with notes on DAMAGE TO CORN BY PHEASANTS AND OTHER WILDLIFE
By Charles A. Dambach and D. L. Leedy; Journal of Wildlife Management; October, 1948.

13. THE ORIGIN AND DISTRIBUTION OF PHOSPHORUS IN WESTERN LAKE ERIE
By Herbert Curl, Jr.; Limnology and Oceanography; January, 1959.

14. OSMOTIC HATCHING IN THE EGGS OF SOME FRESH-WATER COPEPODS
By Charles C. Davis; Biological Bulletin; February, 1959.

15. THE OTTER TRAWL AS A FISH SAMPLING DEVICE IN WESTERN LAKE ERIE
By Edward C. Kinney; Transactions of the American Fisheries Society; 1956.

16. PHYTOPLANKTON COMMUNITIES OF WESTERN LAKE ERIE AND THE CO_2 AND O_2 CHANGES ASSOCIATED WITH THEM
By Jacob Verdvin; Limnology and Oceanography; October, 1960.

17. A PLANKTONIC FISH EGG FROM FRESH WATER
By Charles C. Davis; Limnology and Oceanography; October, 1960.

18. PRE-EMPLOYMENT TRAINING OF CONSERVATIONISTS
By Charles A. Dambach; Journal of Soil and Water Conservation; July-August, 1963.

19. RECREATIONAL USE OF IMPOUNDING RESERVOIRS
By Charles A. Dambach; Journal of the American Water Works Assn.; May, 1956.

20. THE RELATIVE IMPORTANCE OF HUNTING RESTRICTIONS AND LAND USE IN MAINTAINING WILDLIFE POPULATIONS OF OHIO
By Charles A. Dambach; Ohio Journal of Science, Vol. XLVIII, No. 6; November, 1948.

21. A REVIEW OF THE REPORT OF THE COMMITTEE ON ENVIRONMENTAL HEALTH PROBLEMS TO THE SURGEON GENERAL
By Charles A. Dambach; Natural Resources Journal; October, 1964.

22. TRAINING AND EMPLOYMENT OF WILDLIFE BIOLOGISTS AND FISHERY BIOLOGISTS
By the 1958-59 Employment Committee of the Wildlife Society; Journal of Wildlife Management, Vol. 25, No. 2; pp. 190-199.

Others

1. A GUIDE TO TEACHING CONSERVATION IN OHIO ELEMENTARY SCHOOLS
By Charles A. Dambach and Robert R. Finlay; available from the Ohio Forestry Assn., Inc.; 1961.

2. SELECTED STUDIES CONCERNING POLICIES AND PROGRAMS IN NATURAL RESOURCE CONSERVATION.

APPENDIX H

PUBLICATIONS OF THE OHIO BIOLOGICAL SURVEY

BULLETINS OF THE OHIO BIOLOGICAL SURVEY

Volume I

I.	Outline of Biological Survey Plans (H. O.) and Syrphidae of Ohio, by C. L. Metcalf	$ .50
II.	Catalog of Ohio Vascular Plants, by John H. Schaffner	.50
III.	Botanical Survey of the Sugar Grove Region, by R. F. Griggs	1.00
IV.	The Euglenoidina of Ohio, by L. B. Walton	.50

Volume II

V.	The Ascomycetes of Ohio-I, by Bruce Fink	
VI.	Qualities and Uses of the Woods of Ohio, by William Lazenby	.50
VII.	The Physiographic Ecology of the Cincinnati Region, by E. Lucy Braun	1.00
VIII.	The Tingitoidea of Ohio, by Herbert Osborn and Carl J. Drake	.50
IX.	The Grasses of Ohio, by John H. Schaffner	.50
X.	The Ascomycetes of Ohio-IV and V, by Bruce Fink and Leafy J. Corrington	.50

Volume III

XI.	The Slime Molds of Ohio, by Prof. E. L. Fullmer	.50
XII.	The Fimetariales of Ohio (Probably III of the Ascomycetes of Ohio), by Robert Stratton	.50
XIII.	The Crayfishes of Ohio, by Clarence L. Turner	.50
XIV.	The Leafhoppers of Ohio, by Herbert Osborn	1.00
XV.	The Vegetation of the Mineral Springs Region of Adams County, Ohio, by E. Lucy Braun	1.00

Volume IV

XVI.	The Miridae of Ohio, by S. A. Watson	.50
XVII.	The Earthworms of Ohio, by H. W. Olson	.50
XVIII.	Millipedes and Centipedes of Ohio, by Stephen R. Williams and Robert A. Hefner	.50
XIX.	A Revision of the Order Phalangida of Ohio, by Mary E. Walker	.50

XX.	Distribution Maps of Certain Plants in Ohio, by E. N. Transeau and P. E. Williams	$ .50
XXI.	The Plant Ecology of the Hazelwood Botanical Preserve, by John G. Segelken	.50
XXII.	The Gasteromycetae of Ohio; Puffballs, Bird's Nest Fungi and Stinkhorns, by Minnie May Johnson	1.00
XXIII.	Bibliography of Ohio Zoology, by Herbert Osborn	.50

Volume V

XXIV.	Studies Concerning Organisms Occurring in Water Supplies, by L. B. Walton	1.00
XXV.	Revised Catalog of Ohio Vascular Plants, by John H. Schaffner	1.00
XXVI.	Studies on the Animal Ecology of the Hocking River Basin. The Bottum Invertebrates of the Hocking River, by William B. Ludwig. The Plankton of the Hocking River, by Lee Stewart Roach	1.00
XXVII.	Bibliography of Ohio Botany, by Ethel Melsheimer Miller	1.00
XXVIII.	An Ecological Study of the Fishes of the Hocking River, by P. Sheridan Shurrager	.50
XXIX.	The Ostracoda of Ohio, by Norma C. Furtos	1.00

Volume VI

XXX.	A Quantitative Study of Rotatoria in Terwilliger's Pond, Put-in-Bay, Ohio, by Elbert H. Ahlstrom	.50
XXXI.	Leafhoppers of Ohio; Subfamily Typhlocybinae, by Dorothy M. Johnson	1.00
XXXII.	Distribution of Breeding Birds of Ohio, by Lawrence E. Hicks	.75
XXXIII.	A Study of the Small-Mouth Bass, Micropterus dolomieu (Lacapede) in Rearing Ponds in Ohio, by T. H. Langlois	.50
XXXIV.	The Jumping Plant-Lice of Ohio (Homoptera: Chermidae), by John S. Caldwell	.50
XXXV.	The Fulgoridae of Ohio, by Herbert Osborn	.75

Volume VII

XXXVI.	A Catalog of the Lichens of Ohio, by John N. Wolfe	.75
XXXVII.	The Membracidae of Ohio, by Herbert Osborn	.75

XXXVIII. A Key to the Genera of the Compositales of Northeastern North America, by Richard A. Popham . . . . . $ .50

XXXIX. The Long-Horned Beetles of Ohio, by Josef N. Knull 1.50

XL. Recent Insect Invasions in Ohio, by Herbert Osborn, Neale Howard, C. R. Neiswander, N. B. Blackburn, C. R. Cutright, T. H. Parks, R. B. Neiswander, and J. B. Polivka 50

Volume VIII

XLI. Microclimates and Macroclimate of Neotoma, a Small Valley in Central Ohio, by John N. Wolfe, Richard T. Wareham, and Herbert T. Scofield 1.50

XLII. The Checkered Beetles of Ohio (Coleoptera: Cleridae), by Josef N. Knull 75

XLIII. Leaf Beetles of Ohio, by John A. Wilcox 75

Volume I--New Series

1. The Primeval Forests of a Periglacial Area in the Allegheny Plateau, by Janice C. Beatley 3.00
2. The Taxonomy, Distribution and Developmental Stages of Ohio Water Mites, by Robert M. Crowell 1.25
3. The Shell-Bearing Land Snails of Ohio, by Celeste Taft 2.00
4. The Anobiidae of Ohio, by Richard E. White 1.00
5. Biology of Two Species of Lake Erie Mayflies, by N. Wilson Britt 1.00

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2. The Armored Scale Insects of Ohio, by Michael Kosztarab 2.50
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4. A Contribution Toward a Bibliography of Ohio Zoology, by David J. Gerrick 3.00

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3. An Ecological Survey of the Vegetation of Fort Hill State Memorial, by E. Lucy Braun . . . . . In Press

Notes Series

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2. An Ecological Study of Crall Woods, by John Aughanbaugh 75
3. Lichens of Ohio, Part I, Foliose, by Conan J. Taylor, O.F.M. 5.00
4. Lichens of Ohio, Part II, Fruticose and Cladoniform, by Conan J. Taylor, O.F.M. 3.00

APPENDIX I

ALUMNI ADVISORY COMMITTEE
TO THE SCHOOL OF NATURAL RESOURCES

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ALUMNI ADVISORY COMMITTEE TO THE SCHOOL OF NATURAL RESOURCES

The College of Agriculture and Home Economics organized in 1969 an alumni group comprised of alumni of the several departments of the College. Lacking an alumni, the School of Natural Resources began to organize an honorary alumni group, and named an advisory committee to aid in its development. The membership of this committee is listed below.

Mr. Robert R. Finlay	Supervisor, Conservation Education, Ohio Department of Education
Mr. Robert R. Paton	Past Executive Director, Ohio Forestry Association
Mr. John Oney	Product Engineer Arbogast Bait Company
Mr. George Laycock	Free-lance writer
Mr. Edward F. Hutchins	Outdoor Writer, Columbus Dispatch
Mr. Walter A. Tucker	Columbus Metropolitan Park Board
Mr. Ralph J. Bernhagen	Chief, Water Planning Section Ohio Department of Natural Resources
Mr. James M. Jennings	President, James M. Jennings Associates, Area Economics Associates
Mr. John H. Melvin	Executive Officer, Ohio Academy of Science

Mr. S. L. Frost	Deputy Director for Water, Ohio Department of Natural Resources

APPENDIX J

LISTING AND LOCATION OF SOURCES OF HISTORICAL DATA

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University Archives, 2070 Neil Avenue, Room 305
- Board of Trustees, Minutes and Annual Reports, 1870-1968.
- Office of President, Annual Reports, 1873-1968.
- Office of President, Correspondence Files, 1872-1961.
- Faculty Minutes, 1873-1967.
- History of The Ohio State University, Vols. I - VIII, 1870-1945.
- Makio, 1880-1969
- University Bulletins, 1870-1969.

The Ohio State University Collection, W. O. Thompson Library
- Board of Trustees, Minutes and Annual Reports, 1870-1968.
- University Bulletins, 1870-1969.
- Makio, 1880-1969.

School of Natural Resources, Faculty Library, Lord Hall, 124 W. 17th Avenue.
- Correspondence Files:
  - The Natural Resources Institute
  - The Ohio Biological Survey
  - The Conservation Laboratory for Teacher Training
  - The School of Natural Resources
- Departmental Publications - Annual Reports, Research Reports, etc.
- Personnel Records:
  - The Natural Resources Institute
  - The Ohio Biological Survey
  - The School of Natural Resources
- Reference books and pamphlets published by the contributing forces of the School of Natural Resources

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